

WHAT IS CLAIMED IS:

1. A chuck device in which a plurality of claws provided at a tip end of a body is slidably opened and closed to clamp a tool with the claws by rotation of a rotary sleeve, wherein an annular ratchet tooth wheel is provided in the body, an annular nut member that engages with said claws and rotates together with said rotary sleeve is provided inside the rotary sleeve and behind the ratchet wheel within the body, a retainer spring member that is composed of a leaf spring made of metal and detached and attached for engaging said ratchet tooth wheel is disposed outside of said ratchet tooth wheel, said retainer spring member is provided under the condition said retainer spring member is rotated around the ratchet wheel in accordance with a rotation of a retainer spring receiving sleeve within said retainer spring receiving sleeve that rotates together with said nut member and that is fitted around said nut member and made of metal, said retainer spring member is mounted on the retainer spring receiving sleeve by a convex/concave engagement means, a holder spring member that is composed of a metal made leaf spring formed as a detachable/attachable separate member from said retainer spring member for holding a retention release condition between said ratchet tooth wheel and said retainer spring member and the retention condition between the ratchet tooth wheel and said retainer spring member is disposed at a position facing said retainer spring member outside said ratchet tooth wheel, said holder spring member is adapted in said retainer spring receiving sleeve to rotate around the ratchet tooth wheel in accordance with the rotation of said retainer spring receiving sleeve, said holder spring member is mounted on the retainer spring receiving sleeve by said concave/convex engagement means, a metal made working sleeve that rotates together with said rotary sleeve and rotates through a predetermined angle relative to said retainer spring receiving sleeve is provided in said retainer spring receiving sleeve, a retainer working portion is provided in said working sleeve, said retainer working portion being composed of a retainer holder portion for maintaining a retention condition between said ratchet tooth wheel and said retainer spring member and a pressure portion for depressing the projection of said retainer spring member which is to be inserted into a hole portion of said retainer spring receiving sleeve and retaining said retainer spring member to said ratchet tooth wheel, a position holder portion for holding a position of said working sleeve to said retainer spring receiving sleeve to thereby hold the retention condition between said retainer spring member and said ratchet tooth wheel and the release condition between said retainer spring member and said ratchet tooth wheel is provided in said working sleeve, and said position holder portion is constituted by a projection of said holder spring member and a hole portion which is formed in said working

sleeve and into which said projection is inserted, said projection is engaged with an elongated hole provided in said retainer spring receiving sleeve, said elongated hole has a tip end opening shape cut away from a tip end edge to a proximal end side of said retainer spring receiving sleeve so that said working sleeve may rotate within a range of said elongated hole to said retainer spring receiving sleeve and said nut member may rotate with said projection in contact with an inner end of said elongated hole, and said hole portion into which said projection of said retainer spring member is inserted has a tip end opening shape cut away from the tip end edge to the proximal end side of said retainer spring receiving sleeve.

2. A chuck device in which a plurality of claws provided at a tip end of a body is slidably opened and closed to clamp a tool with the claws by rotation of a rotary sleeve, wherein an annular ratchet tooth wheel is provided in the body, an annular nut member that engages with said claws and rotates together with said rotary sleeve is provided inside the rotary sleeve and behind the ratchet wheel within the body, a retainer spring member that is composed of a leaf spring made of metal and detached and attached for engaging said ratchet tooth wheel is disposed outside of said ratchet tooth wheel, said retainer spring member is provided under the condition said retainer spring member is rotated around the ratchet wheel in accordance with a rotation of a retainer spring receiving sleeve within said retainer spring receiving sleeve that rotates together with said nut member and that is fitted around said nut member and made of metal, a structure in which a projection formed in said retainer spring member is fitted in a hole portion formed in said retainer spring receiving sleeve is provided for mounting said retainer spring member onto said retainer spring receiving sleeve, a holder spring member that is composed of a metal made leaf spring formed as a detachable/attachable separate member from said retainer spring member for holding a retention release condition between said ratchet tooth wheel and said retainer spring member and the retention condition between the ratchet tooth wheel and said retainer spring member is disposed at a position facing said retainer spring member outside said ratchet tooth wheel, said holder spring member is adapted in said retainer spring receiving sleeve to rotate around the ratchet tooth wheel in accordance with the rotation of said retainer spring receiving sleeve, said holder spring member is mounted on the retainer spring receiving sleeve by said structure in which the projection formed in said retainer spring member is fitted in the hole portion formed in said retainer spring receiving sleeve, a metal made working sleeve that rotates together with said rotary sleeve and rotates through a predetermined angle relative to said retainer spring receiving sleeve is provided in said retainer spring receiving sleeve, a retainer working portion is provided in

said working sleeve, said retainer working portion being composed of a retainer holder portion for maintaining a retention condition between said ratchet tooth wheel and said retainer spring member and a pressure portion for depressing the projection of said retainer spring member which is to be inserted into a hole portion of said retainer spring receiving sleeve and retaining said retainer spring member to said ratchet tooth wheel, a position holder portion for holding a position of said working sleeve to said retainer spring receiving sleeve to thereby hold the retention condition between said retainer spring member and said ratchet tooth wheel and the release condition between said retainer spring member and said ratchet tooth wheel is provided in said working sleeve, and said position holder portion is constituted by a projection of said holder spring member and a hole portion which is formed in said working sleeve and into which said projection is inserted, said projection is engaged with an elongated hole provided in said retainer spring receiving sleeve, said elongated hole has a tip end opening shape cut away from a tip end edge to a proximal end side of said retainer spring receiving sleeve so that said working sleeve may rotate within a range of said elongated hole to said retainer spring receiving sleeve and said nut member may rotate with said projection in contact with an inner end of said elongated hole, and said hole portion provided in said retainer spring receiving sleeve has a tip end opening shape cut away from the tip end edge to the proximal end side of said retainer spring receiving sleeve.

3. A chuck device in which a plurality of claws provided at a tip end of a body is slidably opened and closed to clamp a tool with the claws by rotation of a rotary sleeve, wherein an annular ratchet tooth wheel is provided in the body, an annular nut member that engages with said claws and rotates together with said rotary sleeve is provided inside the rotary sleeve and behind the ratchet wheel within the body, a retainer spring member that is composed of a leaf spring made of metal and detached and attached for engaging said ratchet tooth wheel is disposed outside of said ratchet tooth wheel, said retainer spring member is provided under the condition said retainer spring member is rotated around the ratchet wheel in accordance with a rotation of a retainer spring receiving sleeve within said retainer spring receiving sleeve that rotates together with said nut member and that is fitted around said nut member and made of metal, a structure in which a projection and a hole portion formed in said retainer spring receiving sleeve and a recess portion and a projection formed in said retainer spring member are engaged with each other is provided for mounting said retainer spring member onto said retainer spring receiving sleeve, a holder spring member that is composed of a metal made leaf spring formed as a detachable/attachable separate member from said retainer spring member for holding a

retention release condition between said ratchet tooth wheel and said retainer spring member and the retention condition between the ratchet tooth wheel and said retainer spring member is disposed at a position facing said retainer spring member outside said ratchet tooth wheel, said holder spring member is adapted in said retainer spring receiving sleeve to rotate around the ratchet tooth wheel in accordance with the rotation of said retainer spring receiving sleeve, said holder spring member is mounted on the retainer spring receiving sleeve by said structure in which the projection and the hole portion formed in said retainer spring receiving sleeve and the recess portion and the projection formed in said retainer spring member are engaged with each other, a metal made working sleeve that rotates together with said rotary sleeve and rotates through a predetermined angle relative to said retainer spring receiving sleeve is provided in said retainer spring receiving sleeve, a retainer working portion is provided in said working sleeve, said retainer working portion being composed of a retainer holder portion for maintaining a retention condition between said ratchet tooth wheel and said retainer spring member and a pressure portion for depressing the projection of said retainer spring member which is to be inserted into a hole portion of said retainer spring receiving sleeve and retaining said retainer spring member to said ratchet tooth wheel, a position holder portion for holding a position of said working sleeve to said retainer spring receiving sleeve to thereby hold the retention condition between said retainer spring member and said ratchet tooth wheel and the release condition between said retainer spring member and said ratchet tooth wheel is provided in said working sleeve, and said position holder portion is constituted by a projection of said holder spring member and a hole portion which is formed in said working sleeve and into which said projection is inserted, said projection is engaged with an elongated hole provided in said retainer spring receiving sleeve, said elongated hole has a tip end opening shape cut away from a tip end edge to a proximal end side of said retainer spring receiving sleeve so that said working sleeve may rotate within a range of said elongated hole to said retainer spring receiving sleeve and said nut member may rotate with said projection in contact with an inner end of said elongated hole, and said hole portion provided in said retainer spring receiving sleeve has a tip end opening shape cut away from the tip end edge to the proximal end side of said retainer spring receiving sleeve.

4. A chuck device in which a plurality of claws provided at a tip end of a body is slidably opened and closed to clamp a tool with the claws by rotation of a rotary sleeve, wherein an annular ratchet tooth wheel is provided in the body, an annular nut member that engages with said claws and rotates together with said rotary sleeve is provided inside the rotary sleeve and behind the ratchet wheel within the body, a retainer spring member

that is composed of a leaf spring made of metal and detached and attached for engaging said ratchet tooth wheel is disposed outside of said ratchet tooth wheel, said retainer spring member is provided under the condition said retainer spring member is rotated around the ratchet wheel in accordance with a rotation of a retainer spring receiving sleeve within said retainer spring receiving sleeve that rotates together with said nut member and that is fitted around said nut member and made of metal, said retainer spring member is mounted on the retainer spring receiving sleeve by a convex/concave engagement means, a holder spring member that is composed of a metal made leaf spring formed as a detachable/attachable separate member from said retainer spring member for holding a retention release condition between said ratchet tooth wheel and said retainer spring member and the retention condition between the ratchet tooth wheel and said retainer spring member is disposed at a position facing said retainer spring member outside said ratchet tooth wheel, said holder spring member is adapted in said retainer spring receiving sleeve to rotate around the ratchet tooth wheel in accordance with the rotation of said retainer spring receiving sleeve, said holder spring member is mounted on the retainer spring receiving sleeve by said concave/convex engagement means, a metal made working sleeve that rotates together with said rotary sleeve and rotates through a predetermined angle relative to said retainer spring receiving sleeve is provided in said retainer spring receiving sleeve, a retainer working portion is provided in said working sleeve, said retainer working portion being composed of a retainer holder portion for maintaining a retention condition between said retainer spring member and said ratchet tooth wheel and a retainer condition release portion for releasing the retained condition between said retainer spring member and said ratchet tooth wheel, a position holder portion for holding a position of said working sleeve to said retainer spring receiving sleeve to thereby hold the retention condition between said retainer spring member and said ratchet tooth wheel and the release condition between said retainer spring member and said ratchet tooth wheel is provided in said working sleeve, and said position holder portion is constituted by a projection of said holder spring member and a hole portion which is formed in said working sleeve and into which said projection is inserted, and said projection is engaged with an elongated hole provided in said retainer spring receiving sleeve, and said elongated hole has a tip end opening shape cut away from a tip end edge to a proximal end side of said retainer spring receiving sleeve so that said working sleeve may rotate within a range of said elongated hole to said retainer spring receiving sleeve and said nut member may rotate with said projection in contact with an inner end of said elongated hole.

5. The chuck device according to any one of claims 1 to 4, wherein each component

is made of metal.